

## IN THE CLAIMS

Claims 1-9 (cancelled)

10. (new) A process comprising producing at least one of an alkyl or aryl lithium compound by reacting lithium metal with at least one alkyl or an aryl halide in at least one solvent, wherein the concentrations of the alkyl halide or the aryl halide and the alkyl or aryl lithium compound are determined by inline measurement in the reactor by IR spectroscopy.

11. (new) A process according to claim 10, wherein an IR spectrometer in the wavelength range from 600 to 4000  $\text{cm}^{-1}$  is used.

12. (new) A process according to claim 10, wherein an absolute total reflection cell (ATR cell) with a diamond sensor and high sensitivity is used as the IR probe, wherein the ATR cell is immersed directly in the reaction mixture and is specially sealed, the measurement set-up being explosion-proof and being scoured with an inert gas, such as argon or nitrogen.

13. (new) A process according to claim 10, wherein the complete measurement set-up is equipped with a safety valve to prevent the release of pyrophoric material in the event of mechanical damage to the sensor.

14. (new) A process according to claim 10, wherein to ensure a stable measurement process the instrument is thermostatically controlled and is protected against external electrical fluctuations.

15. (new) A process according to claim 10, wherein aliphatic (such as methyl lithium, ethyl lithium, propyl lithium, butyl lithium including all isomers, hexyl lithium, octyl lithium) or aromatic lithium alkyl compounds (such as phenyl lithium, tolyl lithium, mesityl lithium) are obtained.

16. (new) A process according to claim 10, wherein the solvent comprises an aliphatic hydrocarbon, a cycloaliphatic hydrocarbon, an aromatic hydrocarbon, an ether, a cycloaliphatic hydrocarbon, an aromatic hydrocarbon or a mixture thereof.

17. (new) A process according to claim 10, wherein the process is performed under normal pressure, in vacuo, or in an overpressure range.

18. (new) A process according to claim 10, wherein the process is performed at temperatures from -120°C to 100°C.

19. (new) A process according to claim 10, wherein the solvent comprises at least one solvent selected from the group consisting of pentane, hexane, heptane, octane, cyclopentane, cyclohexane, methyl cyclohexane, toluene, xylene, mesitylene diethyl ether, diisopropyl ether, dibutyl ether, methyl tert-butyl ether, tetrahydrofuran, 2-methyl tetrahydrofuran or a mixture thereof.